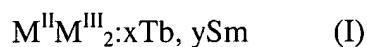


IN THE CLAIMS:

1. (Previously Amended) A method for measuring a radiation dose which comprises the steps of:

applying a target radiation to a dosimeter containing a terbium-samarium co-activated alkaline earth metal rare earth oxide phosphor which is composed of an oxygen atom and a composition of the formula (I):



in which M^{II} is at least one alkaline earth metal element selected from the group consisting of Mg, Ca, Sr and Ba; M^{III} is at least one rare earth element selected from the group consisting of Y, La, Gd and Lu; and x and y are numbers satisfying the conditions of $0 < x \leq 0.1$ and $0 < y \leq 0.1$, respectively, to cause the phosphor to emit a green light;

and

measuring a variation per unit time of strength of the green light.

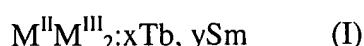
2. (Original) The method of claim 1, wherein the dosimeter is in the form of a sheet which comprises a support and a phosphor layer containing the phosphor.

3. (Original) The method of claim 1, wherein M^{II} in the formula (I) is at least one of Sr and Ba, and M^{III} in the formula (I) is at least one of Y and Gd.

4. (Original) The method of claim 1, which further comprises the step of preparing a calibration curve by applying a standard target radiation in a known dose to the same dosimeter, and measuring a variation per unit time of strength of a green light emitted by the phosphor.

5. (Previously Amended) A method of producing a radiation image which comprises the steps of:

applying a radiation having passed through a target or having been radiated by a target onto a radiation image storage panel containing a layer of terbium-samarium co-activated alkaline earth metal rare earth oxide phosphor which is composed of an oxygen atom and a composition of the formula (I):



in which M^{II} is at least one alkaline earth metal element selected from the group consisting of Mg, Ca, Sr and Ba; M^{III} is at least one rare earth element selected from the group consisting of Y, La, Gd and Lu; and x and y are numbers satisfying the conditions of $0 < x \leq 0.1$ and $0 < y \leq 0.1$, respectively, to cause the phosphor to emit a green light;

determining a variation per unit time of strength of the green light in each pixel which is imaginarily set on the storage panel, to obtain two-dimensional image data;

and

producing a radiation image from the obtained image data.

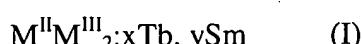
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6. (Original) The method of claim 5, wherein M^{II} in the formula (I) is at least one of Sr and Ba, and M^{III} in the formula (I) is at least one of Y and Gd.

7. (Currently Amended) A method for measuring a dose of ultraviolet rays which comprises the steps of:

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applying a-target ultraviolet rays to a means containing a terbium-samarium co-activated alkaline earth metal rare earth oxide phosphor which is composed of an oxygen atom and a composition of the formula (I):



in which M^{II} is at least one alkaline earth metal element selected from the group consisting of

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Mg, Ca, Sr and Ba; M^{III} is at least one rare earth element selected from the group consisting of Y, La, Gd and Lu; and x and y are numbers satisfying the conditions of $0 < x \leq 0.1$ and $0 < y \leq 0.1$, respectively, to cause the phosphor to emit a green light;

and

measuring a variation per unit time of strength of the green light.

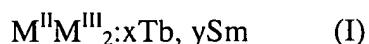
8. (Original) The method of claim 7, wherein the means is in the form of a sheet which comprises a support and a phosphor layer containing the phosphor.

9. (Original) The method of claim 7, wherein M^{II} in the formula (I) is at least one of Sr and Ba, and M^{III} in the formula (I) is at least one of Y and Gd.

10. (Original) The method of claim 7, which further comprises the step of preparing a calibration curve by applying standard target ultraviolet rays in a known dose to the same means, and measuring a variation per unit time of strength of a green light emitted by the phosphor.

11. (Currently Amended) A method for measuring a radiation dose which comprises the steps of:

applying ultraviolet rays to a dosimeter containing a terbium-samarium co-activated alkaline earth metal rare earth oxide phosphor which is composed of an oxygen atom and a composition of the formula (I):



in which M^{II} is at least one alkaline earth metal element selected from the group consisting of Mg, Ca, Sr and Ba; M^{III} is at least one rare earth element selected from the group consisting of Y, La, Gd and Lu; and x and y are numbers satisfying the conditions of $0 < x \leq 0.1$ and $0 < y \leq 0.1$,

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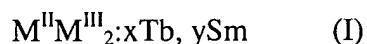
respectively, to cause the phosphor to emit a first green light and a first red light;
measuring a strength of the first green light and a strength of the first red light;
applying a target radiation to the dosimeter, so as to cause variation of atomic valency for
the terbium and samarium;
applying ultraviolet rays to the dosimeter to which the target radiation has been applied,
to cause the phosphor to emit a second green light and a second red light;
measuring a strength of the latter-second green light and a strength of the latter-second
red light;
and
comparing the former strengths of the first green light and first red light with the latter
strengths of the second green light and the second red light.

12. (Original) The method of claim 11, wherein the dosimeter is in the form of a
sheet which comprises a support and a phosphor layer containing the phosphor.

13. (Original) The method of claim 11, wherein M^{II} in the formula (I) is at least
one of Sr and Ba, and M^{III} in the formula (I) is at least one of Y and Gd.

14. (Currently Amended) A method of producing a radiation image which comprises
the steps of:

applying ultraviolet rays to a radiation image storage panel containing a layer of a
terbium-samarium co-activated alkaline earth metal rare earth oxide phosphor which is
composed of an oxygen atom and a composition of the formula (I):



in which M^{II} is at least one alkaline earth metal element selected from the group consisting of
Mg, Ca, Sr and Ba; M^{III} is at least one rare earth element selected from the group consisting of Y,

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La, Gd and Lu; and x and y are numbers satisfying the conditions of $0 < x \leq 0.1$ and $0 < y \leq 0.1$, respectively, to cause the phosphor to emit a first green light and a first red light;

measuring in each pixel which is imaginarily set on the storage panel, a strength of the first green light and a strength of the first red light, to obtain two-dimensional image data;

Ca end
applying a radiation having passed through a target or having been radiated by a target onto said radiation image storage panel, so as to cause variation of atomic valency for the terbium and samarium in each pixel;

applying ultraviolet rays to the storage panel to which the target radiation has been applied, to cause the phosphor to emit a second green light and a second red light;

determining in each pixel a strength of the latter-second green ~~light~~ light and a strength of the latter-second red light, to obtain two-dimensional image data; and

processing the latter-strengths of the second green light and the second red light with reference to the former-strengths of the first green light and the first red light in each pixel, for producing a radiation image from the obtained image data.
